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Defensive secretions of the beetle *Zophobas rugipes* F. (Introduced by Rudolph Pipa)

The Central American tenebrionid beetle, *Zophobas rugipes*, has a pair of prothoracic defense glands secreting a mixture of phenols and a pair of abdominal defense glands secreting a mixture of quinones. The free phenols were separated and the peaks collected by GLC on a 15% FFAP column or by column chromatography on alumina. Cresol is the major component as judged by UV and NMR of the *n*-phenyl urethane. Ethylphenol and phenol were also identified as minor components by UV and by comparison of retention times on three columns (FFAP, SE-30, NPGS). Two quinones were separated and collected from a 5% SE-30 column. They appeared to be toluquinone and ethylquinone (UV, NMR and m.p.). Some minor, as yet unidentified, peaks were also present. The phenol-secreting prothoracic glands consist of a pair of reservoirs opening on the membrane between the head and prothorax. The reservoir is covered with glandular-appearing tissue. The orifice is controlled by a muscle, but the milky secretion is presumably expelled by hemolymph pressure. The abdominal quinone-secreting glands are a pair of eversible sacs located between the fifth and sixth sternites. Their gross anatomy is similar to the homologous glands in *Tenebrio molitor*. When disturbed, larvae of *Z. rugipes* and several other tenebrionids squirt hemolymph from predetermined breaks in the lateral body wall.

The composition of the quinone secretion of *Z. rugipes* has been compared by GLC with the homologous secretion of other tenebrionids. Taxonomic relationships appear to be reflected in the composition of these secretions. (Aided by NIH predoctoral fellowship and NSF grant GB-6424X)